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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/229,849    01/13/99    SERRANO    M    07470/30001

020985    WM02/1113  
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EXAMINER

FLEURANTIN, J

ART UNIT

PAPER NUMBER

2172

DATE MAILED:

11/13/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
09/229,849

Applicant(s)

Martin Serrano

Examiner  
Jean Bolte Fleurantin

Group Art Unit  
2172



☒ Responsive to communication(s) filed on Jul 27, 1900

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-18 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-18 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4-6

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

1. Claims 1 through 18 are presented for examination.

#### *Drawings*

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

#### *Claim Rejections - 35 U.S.C. § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brenner et al. (US Pat. No. 5,799,149).

As per claims 1 and 10, Brenner substantially teaches a method for parallelizing a computer application program based on a script of a script-driven software tool (see col. 1, lines 56-58), comprising automatically analyzing the script and producing a parallel computation specification based on such analysis (where, automatically router to the correct SDR which will only return information about that partition, which is readable as automatically analyzing the script and producing a parallel computation specification based on such analysis) (see col. 9, lines 16-20). But, Brenner does not explicitly teach step of where such parallel computation specification provides functional equivalence to the script when executed by a parallel runtime

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*Brenner*  
system. However, *Brenner* implicitly teaches a step of second record containing the destination for the persistent system partition is used by the boot script to access the SDR to find out what the first record of the destination information file, which is equivalent to functional equivalence to the script when executed by a parallel runtime system (see figure 3, elements 301 and 319, cols. 8 and 9, lines 66-67 and 1-4). Also in the abstract, lines 13 through 15, *Brenner* teaches once the environment is partitioned the system data stored in the repository is organized into system or partitioned classes. It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention was made to have modified the teaching of *Brenner* with the step of functional equivalence to the script when executed by a parallel runtime system, because such modification would allow *Brenner* to provide the ability to divide up system resources into groups or parts in order to facilitate particular management functions, and increased the capacity and the speed (see cols 2 and 1, lines 25-27 and 27-28).

As per claims 2 and 11, *Brenner* substantially teaches a method for parallelizing a computer application program based on a script of a script-driven software tool (see col. 1, lines 56-58), comprising automatically analyzing the script and producing a parallel computation specification plus a script fragment set based on such analysis (where, automatically router to the correct SDR which will only return information about that partition, which is readable as automatically analyzing the script and producing a parallel computation specification based on such analysis) (see col. 9, lines 16-20). But, *Brenner* does not explicitly teach step of where such parallel computation specification and script fragment set provides functional equivalence to the

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*Brenner*

script when executed by a parallel runtime system. However, *Brenner* implicitly teaches a step of second record containing the destination for the persistent system partition is used by the boot script to access the SDR to find out what the first record of the destination information file, which is equivalent to such parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system. Also, in column 6, lines 39 through 41, *Brenner* teaches a step of the system data repository in a manner that survives a rebooting of the system. It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention was made to have modified the teaching of *Brenner* with the step of parallel computation specification and script fragment set provides functional equivalence to the script when executed by a parallel runtime system, because such modification would allow *Brenner* to provide persistent partitioning meaning that a reboot of any node or the entire system as was previously in operation (see col. 6, lines 30-36).

As per claims 3 and 12, *Brenner* substantially teaches a method as claimed, wherein automatically analyzing the script includes (a) parsing the script into statements (thus, the boot script to access the SDR to find the first record of the destination file should be set to, which is readable as script into statements) (see col. 9, lines 1-2);

(b) constructing a serial dataflow graph from the parsed statements (where, all system data is deposited in a system data repository located in the central control element, which readable as serial dataflow graph from the parsed statements) (see abstract, lines 11-15);

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(c) construction a parallel dataflow graph from the serial dataflow graph (see col. 1, 1 lines 36-37). And, also in column 1, lines 17 through 24, Brenner teaches the parallel processing architecture involves the use of many interconnected processors to access large amounts of data.

As per claims 4 and 13, Brenner substantially teaches a method as claimed, wherein constructing the serial dataflow graph includes: (a) constructing a serial data set table of datasets used by the script (thus,, which is readable as constructing a serial data set table of datasets used by the script) (see cols. 8 and 9, lines 1-2);

(b) constructing a serial processing step table of statements performed by the script (where, record of the destination information file, which readable as serial processing step table of statements performed by the script) (see col. 9, lines 1-2);

(c) constructing a serial data set access table indicating datasets in the data set table used by statements in the processing step table (where, servers are used to allow the dynamic creation of a list of resources, which is equivalent to a serial data set access table indicating datasets in the data set table used by statements in the processing step table (see col 7, lines 63-66).

As per claims 5 and 14, Brenner substantially teaches a method as claimed, wherein constructing the parallel dataflow graph includes: (a) constructing a parallel data set table of datasets based on the serial data set table (see col. 9, lines 15-16);

(b) constructing a parallel processing step table of statements based on the serial processing step table (see col. 1, lines 36-37);

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(c) constructing a data set access table based on the serial data set access table (thus,, which is readable as data set access table based on the serial data set access table) (see col. 4, lines 50-51).

(d) determining, for each processing step identified in the parallel processing step table (see col. 1, lines 17-25), if a corresponding pre-defined parallelization rewrite rule exists for such processing step, and if so (where, this concept of data sharing starts with the use of repository located in the central control element software subsystems rely on this data to understand the configuration of the system, which is readable as parallelization rewrite rule exists for such processing step) (see col. 5, lines 49-56), then applying the corresponding pre-defined parallelization rewrite rule to redefine associated entries in the parallel data set table (see col. ), the parallel processing step table, and the data set access table as parallel processing entries; and if not, then defining such associated entries as serial processing entries (where, data globally available to all nodes on all subenvironment or partitioned data accessible exclusive only to nodes residing in one of the partitioned subenvironment, which is equivalent to defining such associated entries as serial processing entries) (see col. 3, lines 6-17).

As per claims 6 and 15, Brenner substantially teaches a method as claimed, further includes resolving any existing partitioning conflicts in the constructed parallel dataflow graph (thus, processing a serial batch application a parallel processor can run many jobs at once, which is equivalent to includes resolving any existing partitioning conflicts in the constructed parallel dataflow graph) (see col. 1, lines 36-37).

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As per claims 7 and 16, Brenner substantially teaches a method as claimed, wherein at least one pre-defined parallelization rewrite rule is an algorithm selected from the group comprising simple partitioning, key-based partitioning, local-global division, external parallelism algorithm, and statement decomposition (where, port is consistent with typical UNIX port usage and eliminates complicated algorithms for finding free port addresses, which is readable as rule is an algorithm selected from the group comprising simple partitioning) (see col. 8, lines 44-50).

As per claims 8 and 17, Brenner substantially teaches a method as claimed, wherein the script-driven software tool is SAS (see col. 9, lines 1-2).

As per claims 9 and 18, Brenner substantially teaches a method as claimed, wherein producing the parallel computation specification includes applying at least one pre-defined parallelization rewrite algorithm selected from the group comprising simple partitioning, key-based partitioning, local-global division, external parallelism algorithm, and statement decomposition (where, eliminates complicated algorithms for finding free port addresses, which is readable as external parallelism algorithm) (see col. 8, lines 44-50).

### ***Conclusion***

5. Any inquiry concerning this communication from examiner should be directed to Jean Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday to Friday from 7:30 A.M. to 6.00 P.M.\



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If any attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Mrs. KIM VU can be reached at **(703) 305-8449**. The FAX phone number is **(703) 305-9731**.

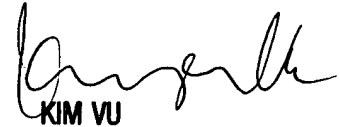
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone is **(703) 305-9600**.



Jean Bolte Fleurantin

October 27, 2000

JBf/



**KIM VU**  
**SUPERVISORY PATENT EXAMINER**  
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